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## ABSTRACT

This paper asserts that school buildings have been and continue to be places to warehouse children, and that new schools just do it in more comfortable settings. It suggests that an examination of the way most government agencies handle the business of school design and construction illustrates how the system is designed to systematically weed out any potential for a completely creative solution. The paper explains that although research is still sparse when it comes to evaluating the benefits of non-traditional learning spaces on learning outcomes, there is solid evidence that progressive methods of education do work when properly implemented, so it makes sense that school facility design should follow suit and support the new teaching and learning modalities. The paper describes some innovative ways and facilities for learner-centered schools: (1) learning studios instead of traditional classrooms; (2) kivas, atriums, and "learning streets" replace corridors; (3) project rooms for project-based learning; (4) from programmed rooms to resource areas; (5) multiage groupings; (6) learning outside school; (7) parent and community use; (8) teacher workrooms; (9) a place to think; (10) technology as liberator; and (11) living, not static, architecture. (Contains 13 references.) (EV)

# But Are They Learning? School Buildings—The Important Unasked Questions

Prakash Nair

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## But Are They Learning?

School Buildings - The Important Unasked Questions  
Prakash Nair, RA, REFP

This publication is based on a paper presented at the International Workshop on Educational Infrastructure, Guadalajara, Jalisco, Mexico, February 2002. The workshop was sponsored by OECD's Programme on Educational Building (PEB) in Paris, France, the Mexican Ministry of Education, and the Administrative Board of the Federal School Construction Programme (CAPFCE), Mexico. The paper was adapted for publication as a Commentary in the April 3, 2002 issue of Education Week.

### Safe, Clean and Comfortable, But Are They Learning?

The United States spends over \$20 billion annually to build and renovate schools. Paul Abramson, writing for School Planning and Management reports that, "More money was spent on school construction in the year 2000 (\$21 billion) than in any previous 12-month period" (Abramson, 2001). This number is expected to grow steadily over the next several years. How much of the money will be spent to improve learning outcomes is anybody's guess.

It is safe to say that most people agree with the proposition: School buildings have an impact on student learning. However, few people, especially politicians and school construction officials, have stopped to ponder why this is so. Much of the public discussion about the need for more construction money centers around the consensus that children need "a safe, clean and comfortable environment" to learn. Beyond that, you will be hard pressed to find any politician saying what exactly it is about new school buildings that improves student learning.

**"School buildings have been and continue to be places to warehouse children. New schools just do it in more comfortable settings."**

### Does Sameness Equal Equity?

The truth of the matter is that school buildings have been and continue to be places to warehouse children. New schools just do it in more comfortable settings. If you look at the way most government agencies handle the "business" of school design and construction, you will see how the system is designed to systematically weed out any potential for a completely creative solution. A number of arguments are proposed for the reason why almost all new schools that are built look so much like each other, but none is sillier than the one about equity. I have personally heard the superintendent of a school system argue against an innovative school because he was afraid it would make his other schools look bad. Rather than use the new school as an opportunity to pilot a new way of teaching and learning, this superintendent preferred to pretend that the world had not changed.

Arguments about equity are also concerned with not spending more money in one location over another. Is it equitable to treat all

specialty  
products.

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people and all communities as if they were the same? True equity will focus on the idea of equalizing opportunities for every child to succeed. That might mean spending more effort or money in some locations and offering a variety of solutions tailored to the particular characteristics of each client community and, therein, for each child.

### **Is Misguided Nostalgia a Good Predictor for Future Success?**

The school building apparatus is but one piece in the larger educational machinery of the United States about which one generalization is safe to make:

The quest for learning is universal but the industrial model is prevalent. The acquisition of information and factoids, divorced from meaningful learning, is the norm. Surprisingly, despite its dismal record of failure and some powerful forces pulling education in a new direction, this traditional model of education is not only alive and well, but is enjoying a new resurgence (Kohn, 1999). There are many reasons why this is so, but one powerful reason is the comfort level that old, familiar schools evoke in the hearts and minds of those making decisions about the future of education. "If it was good enough for me, it is good enough for my children" seems to be the prevailing mantra. As they rely on this misguided nostalgia, the problem is not that communities give a wrong answer to the question, "what is learning?" - but that they rarely ask the question!

### **But Will It Fly?**

Some exemplary schools have been created by virtue of a particular leader's single-minded devotion to getting results aided by a band of like-minded reformists (Meier, 1995). After Deborah Meier overcame the impossibly difficult challenge of getting students to perform beyond their socio-economic predictors in Harlem with her Central Park East schools, others have followed with similar success stories. One such story is told by Eliot Levine about how the Met School in Rhode Island is defying all the odds and redefining the way schools work (Levine, 2002). George Wood, Principal of Federal Hocking High in Ohio talks about changing "institutions to communities" and did just that with his dramatic turnaround of a poor and struggling rural school (Wood, 1999).

Chris Hazelton, a teacher in Duluth, Minnesota, is taking this thinking a step further by having the school facility itself represent his school's philosophy. Working with several inspired colleagues and architect Randall Fielding, Hazelton is launching the New Harbor City International Charter School in an 1860 industrial building in downtown Duluth. However, any resemblance to a factory ends there. The Duluth plan is truly a new paradigm learning environment in every sense of the term. If this level of innovative thinking continues in the area of professional staffing and curriculum development, there is no question that Harbor City's flexible, personalized environment will become an

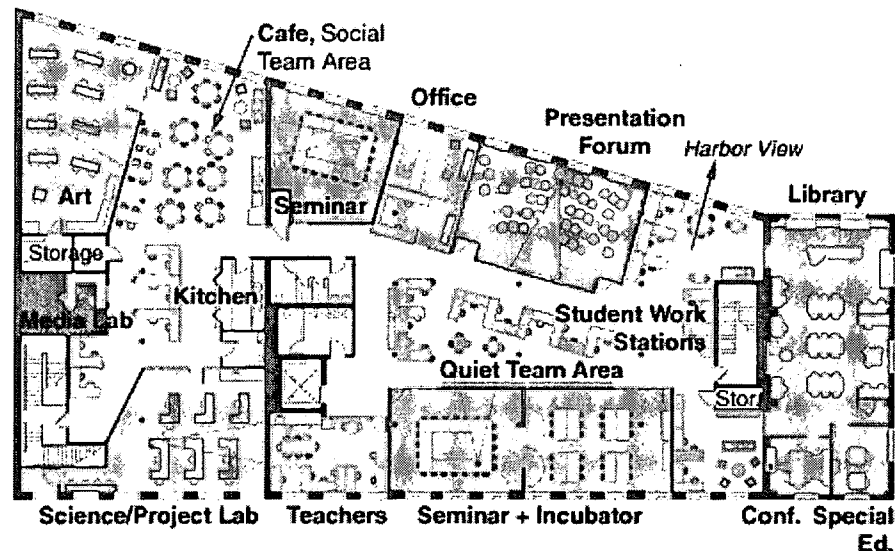
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important part of this school's success.

What is remarkable about Harbor City and so many other innovative schools is that they cost no more than traditional schools. Harbor City's innovative plan calls for about 100/SF per student whereas the recommended national average is about 150 SF/student for high schools. There is no question that the architect and school proponents could have done even more than they already have with a little more space but this example shows why new paradigm schools do not have to be larger nor cost more than traditional schools. Another lesson this school teaches is that a modern school can be created in almost any setting – including an old factory! Thus, it puts to rest the myth that urban areas have no good sites left for schools – an argument that is used to justify placing them in the most marginal sections of town.

- Variable sized spaces
  - Individual workspace
- Presentation space
  - Cave space
  - Spaces with access to food and beverage
  - Studios and labs
- Collaborative incubator
  - Get away spaces, niches
- Display spaces
  - Access to technology

### Harbor City International - A New Paradigm School



Randall Fielding, AIA, Design Architect and Planner  
 Scalzo Architects, Associate Architect

Program & Details

**" Every principal of a school that broke the mould will tell you he or she had to fight the "system" to get there."**

These successes notwithstanding, the system of education in this country is simply not set up to nurture such tailored solutions. Every principal of a school that broke the mould will tell you he or she had to fight the "system" to get there. But what is the system? In almost every case, it is broken up into a pre-defined series of fields and compartments. There are groups responsible for transportation, food and nutrition, building construction and maintenance, curriculum, security, administration, technology, community relations, press, special education, early childhood programs and on and on. Maybe there was a distant time when these groups all operated under one set of guiding principles oriented toward improving student learning but today, they operate more or less as disparate entities.

Individual practitioners in a given field or compartment have little say outside their specific sphere of expertise. In other words, the system operates like a conglomeration of specialists, with no general practitioner in charge of the ultimate goal - learning. In this scheme of things, it is not surprising that the facilities people reside in a place of their own with clearly established boundaries that others may not cross. By the same token, facilities people seem uninterested in challenging the standards handed to them by so-called specialists in the various other disciplines.

To recognize the gravity of these problems in the world of school planning and construction, imagine the design of a Boeing 747 with hundreds of thousands of parts but without someone visualizing the end product. Imagine having to design these parts in isolation with no clear idea how they fit within the overall design for the plane. Now imagine the plane being designed without regard to its most important purpose, to fly, and its most important clients, its passengers. That, indeed, is how learning environments are generally created in the USA and throughout the world. Schools' most important purpose - learning - and

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**" the real clients of schools - those**

**who use it - are  
almost always  
the most  
disenfranchised"**

their most important clients - children and the local community - are largely disregarded in the process of their creation.

In one New York City Community, the Board of Education voted to go ahead and build a school at a site that over 90% of the local population opposed. This, despite the fact that the school was proposed to be located was on a major boulevard where 72 pedestrians had been killed in recent years.<sup>1</sup> Fortunately, that project was put on hold after local residents mobilized political support against its siting but many other communities have not been so lucky. If we don't care about the local community and their children, who exactly are we building these schools for and what is their purpose? We see that platitudes to the contrary notwithstanding, the real clients of schools - those who use it - are almost always the most disenfranchised in their development.

By not having to ask the "but will they learn" question, leadership can exist without vision and the bureaucrats can become fixated on the system - not on the needs of individual learners. It is not that we do not know how to solve these problems. For example, Linda Darling Hammond sets forth a blueprint for schools that work with her passionate arguments for creating a learner-centered vision of education (Darling-Hammond, 1997). However, even as educators like Darling Hammond are rallying the troops to change the face of American schooling, the establishment as a whole seems intent on perpetuating the industrial model. By some measures, real reform efforts have touched only one in 100 schools (Kohn, 1999).

<sup>1</sup> 92% of Community Board 2 in Queens, New York City voted against the Board of Education's plan to locate a school in the predominantly industrial area of Long Island City on a street dubbed by the NY Daily News as "The Boulevard of Death".

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Photo right:  
Heinavaara  
Common Area

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## But Are They Learning?

### Section 2

#### **Did Open Classrooms Close Minds?**

With what is happening in the world of education, should we expect anything different from the school building bureaucracy? Apparently not. As for the private architectural community, their attempts to lead by example have not been very successful either. Their "open classroom" model is often cited as a disastrous attempt by architects to influence educational practice.<sup>2</sup> What happened was that as schools continued to grow and become more overcrowded, noise levels in these spaces became unbearable - something that teachers contributed to by insisting on using the lecture model in spaces that were simply not designed for that kind of teaching and learning style.

I think, however, that people are using this failure too glibly as an excuse to go on building schools they are comfortable with - never mind that the industrial model of schooling should have died when the information and communication revolution began decades ago. While we have learnt that traditional teaching modalities and open classrooms don't mix very well, the open classroom school was, and remains today, a wonderfully innovative way to create learner-centered spaces. A good example of this is the award-winning design of an open classroom school created in Heinavaara, Finland by Bruce Jilk and the Cunningham Group. It is important to remember, however, that while the architects physically shaped this project, the school's success should be attributed mostly to the vision of a very progressive community. They understand that the true value of a good design can only be achieved by users who appreciate its merits

(Tapaninen, 2000). In other words the same design that succeeded at Heinavaara is not necessarily going to work in another community who are not yet ready to migrate to a learner-centered model of education.  
Heinavaara Program and Plan



#### **Would You Hold A School Facility Planner Accountable for Student Learning Outcomes?**

What I would like the top-level bureaucrats to do is to dismantle roadblocks that make innovative schools almost impossible to build. Further, I think that governments can create a positive atmosphere in

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which local communities can feel safe to build innovative schools. A part of this is educating the community about the important trends that are out there in the world of education. A more important part is training bureaucrats to step aside so professionals and stakeholders can work more closely together to create schools that work.

Let me tell you what I mean with an example. I'm a consultant analyzing the management of a large school district in Florida with 180 schools. They plan to spend \$800 million over the next five years on school facilities, yet very few new schools are fundamentally different than the ones they had been building 50 years ago. I made several recommendations to change this including the idea of "outcome driven schools" - schools created from the ground up on the basis of student success. The idea, I explained, is that all aspects of the school creation process including the school facility should be oriented toward realizing those stated outcomes.

In my meeting with the Superintendent of the school system, I was accompanied by the Assistant Superintendent who runs the school district's facilities program. I told the Superintendent that if his assistant built a school for \$20 million where student graduation rates stayed very low (say half of the kids dropping out of school) or where there was excessive violence or where students were doing terribly by all measures of learning, there would be no consequences at all for him. As long as the air conditioning systems worked well and the building looked nice, this assistant may even qualify for a salary increase! Why spend \$20 million, I asked, without first establishing what it is you are trying to achieve? If learning is your objective, then shouldn't everyone responsible for spending the government dollar be held accountable if learning isn't happening?

The superintendent then asked me why it would be fair to hold this particular assistant, a school facility person, accountable if children did not learn. After all, his responsibility was only to build the school - not to design the curriculum or run the school itself.

I told him, "That's right. But if he knew he would be accountable, he would never permit the school to be built without first doing the research on what exactly a school has to be in order to guarantee positive student outcomes. He may discover, for example, that a whole new curriculum is needed. He may realize that without strong parental involvement, the school would have no chance to succeed. He may discover the research that tells us how each student learns differently and how technology could be leveraged to offer personalized learning opportunities. If they don't "get it", he may recommend that different people be hired to design the curriculum or run the school than those you have designated. Most importantly, he may realize that one definition of insanity is doing the same thing over and over and expecting different results.

So then, there is a good chance that he may end up building a school that doesn't look like a school at all and that he will find a way to utilize community resources and local businesses and government grant monies so he can build his school within budget. Of course, he may not succeed and will not succeed if you do not empower him to do all these things. But we know one thing. If we do not make him accountable for the learning outcomes in that building, he is guaranteed to fail." My little speech may

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have had its desired effect because the district has at least agreed to consider building some pilot schools using the outcomes based approach.

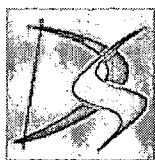
### **Will the One Size Fits All Model Fly in a My Size Fits Me Economy?**

Daniel Pink writing in the magazine, Reason talks about why America retains its world dominance as an economic power despite the poor showing of its schools within the industrialized world. Pink talks about a "free agent" economy where an increasing number of people will simply leave their corporate jobs to do things on their own. (Pink, 2001). This is not some wishful prognostication. In fact, today, some 30 million Americans - one out of every four workers - is already a "free agent". In addition, there are millions more who draw corporate salaries but dictate their own position and working hours. These free agents, Pink asserts, succeed despite their education in school and not because of it. His argument is that schools, by insisting on their "one size fits all" model of service delivery are hopelessly out of touch with the growing "my size fits me" economic model that America has embraced. In other words, by denying their uniqueness and discouraging them from thinking for themselves, our schools are not preparing our children for a free market economy.

<sup>2</sup> I have spoken to many educators and architects who talk about why we should be cautious about "fads". They often point to the open classroom movement as an example of people designing buildings without a real understanding about the needs of the school community. According to author Jamie McKenzie, "Many schools took down their walls to permit an open flow across classrooms. New schools were built without walls. After several years of mixed results, many schools put up new walls. The innovation failed to deliver on its promises for many students." (McKenzie, 2000.)

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## But Are They Learning?

### Section 3

#### **Should They Gatto and Leave or Meier and Stay?**

Beyond the economic arguments there are other compelling reasons why schools, and by extension, school facilities, must change. Foremost among them is research in the field of education that backs the voices of a strong, respected and vocal community arguing for the personalization of learning in our nation's schools. Howard Gardner, Ted Sizer, Deborah Meier, Alfie Kohn and John Gatto are only a few of the dozens of educators around the country calling for a new educational manifesto. Some of them like Gatto are calling on people to boycott schools altogether (Gatto, 1991) while others like Meier see hope for positively reforming the system. In fact, Deborah Meier believes that abandoning America's public schools may seriously hurt the foundations of this country's democratic principles (Meier, 1995).

#### **Can Learning Be Mass-Produced?**

Whatever their particular leanings may be, of one thing the reformists are certain; learning is a highly individual thing and cannot be mass-produced. Each learner needs a tailored program and children need to have active roles in their learning. Motivation comes from within each child and is not some externally applied force. The role of adults is to provide a caring and supportive presence. Measures of performance such as test scores are far less important than measures of qualitative gains such as a child's improved social skills and emotional well being. Ideas are good and children need to be exposed to as many of them as possible but Murray Coppen, an ex-teacher and now policy analyst in the area of school property in New Zealand, talks about how most ideas are "inert" to a child unless he or she gets to try it out in some fashion (Coppen, 2002). That does not mean passive transference of data from one form to another - as is the case when a child copies things from the Internet to place it onto her project board. True engagement comes when children are asked to implement the ideas in some fashion. That means often having opportunities to build things with their own hands, trying out a computer simulation or applying a theory to create something completely new.

#### **How Does Education Research Impact School Facility Design?**

Research is still sparse when it comes to evaluating the benefits of non-traditional learning spaces on learning outcomes. However, since there is solid evidence that progressive methods of education do work when properly implemented, it makes sense that school facility design should follow suit and support the new teaching and learning modalities. Listed below are some ways in which learner centered schools can be configured. This is by no means an exhaustive "menu" of choices, nor a blueprint for a new kind of "prototype". A good school design will probably incorporate these and other modern concepts. However, a successful school is much more than an innovative building; its creation requires the active participation of the user community and other interested stakeholders.

1. **Learning Studios Instead of Traditional Classrooms.** Classrooms will give way to multipurpose "learning studios," places where different children could be engaged on different tasks in various activity zones. Daylighting will be abundant, fixed furniture will be eliminated, and there will be adequate room for both individual space and group gatherings.
2. **Kivas, Atriums, and "Learning Streets" Replace Corridors.** Beyond the learning studio, new learning environments will have fewer corridors where students run past one another and more open areas-both within and outside the building-where social interaction is encouraged. A number of schools that have put these ideas into practice are showcased in the Designshare and School Construction News-sponsored "Awards 2000" and "Awards 2001" programs.
3. **Project Rooms for Project-Based Learning.** These will be high-ceilinged areas with ample power, gas, worktables, and specialized equipment. They are places where students can work on long term projects-usually building something. Such rooms are distinguished from the traditional science labs and art rooms by the fact that they are not specialty oriented. That means one student could be building an architectural model next to another painting a large canvas, next to a student building a robot. As with the world outside school, projects won't start and end with bells, and students will work on them at their own pace.
4. **From Programmed Rooms to Resource Areas.** The school library or media center, cafeteria, and fitness center will become resource areas that students will be able to use as they see fit-not on some predetermined schedule.
5. **Multiage Groupings.** As a reflection of the real world, most student groups will be based on aptitudes and interests and represent a range of ages. As Daniel Pink puts the question: "When was the last time you spent all day in a room filled exclusively with people almost exactly your own age?"
6. **Learning Outside School.** Older students will spend a significant part of their time-perhaps as many as two or three days a week-outside the school building, involved in community service and school-to-work programs and all students will share the wealth of the community's many learning resources like libraries, parks and museums. This means that buildings may not need to accommodate as many students as before and could be built to a smaller scale.
7. **Parent and Community Use.** Areas will be designed with all the amenities needed for school-hours use by parents and volunteers and after-school use by all community residents
8. **Teacher Workrooms.** Places will be provided for teacher research,

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collaborative work and student meetings that treat teachers like the professionals they are

9. **A Place to Think.** Students will have places where they can enjoy a moment of solitude, where they will be allowed both the time and the space to think or not think. Almost every creative endeavor is achieved at least in part through moments of solitude. Given the frenetic pace of modern daily life, the need for places that nourish the spirit and provide those moments has never been greater.
10. **Technology as Liberator.** With every student having ubiquitous access to wireless laptops and other digital communication devices, and with the Internet becoming available to students when and where they need it, there will be less reason for students to be situated in a classroom to learn. Wireless will also permit equipment previously fixed in place like data projectors, printers, and scanners to move freely around the school. The school day will not end when students leave the building. Learning will continue at home, as students and teachers talk to one another via email, or perhaps audio and video chat sessions. With more online course offerings, many classes will have no connection with the school building at all. "Classmates" will not be limited to those who share the same space, but will include those who share the same interests-in town, in another town, or even in another country.
11. **Living, Not Static Architecture.** The building itself will be designed as a "living" space for maximum flexibility and change so that the mix of learning areas - individual, team, small group and large group can be adjusted easily as needs vary.

Learning Street



Peel Education and TAFE Campus, Mandurah Australia  
Spowers Architects [more details](#)

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Every one of these trends has already manifested itself in schools and a few schools have even been designed from the ground up as "new paradigm" schools as I refer to them. In addition to the examples cited earlier, one good example is the Peel Education and TAFE campus in Mandurah, Western Australia. The school designed by Spowers Architects features "broadly dispersed Flexible Learning Areas" and "a semi indoor/outdoor 'Learning Street' to encourage informal opportunities for interactions, learning and community focus." ([designshare awards – 2001](#))

### **How Big a Part Do School Facilities Play in The Education Reform Puzzle?**

School buildings are only a piece of the education reform puzzle but they may be a more important piece than we have understood in the past. As with my argument to the Superintendent of the school district in Florida, what better time to take stock of where you are and where you want to go than just before you invest all that money? My advice to all organizations and governments contemplating a new school is to step back, throw away all your own pre-conceived notions about what school is or should be and take a fresh look at the research about how children (and adults) learn. Then, bring all stakeholders into the process and challenge them to figure out what needs to be done to realize a vision for the future.

It will quickly become apparent that for a school to be truly successful, a host of key partners will be needed. They include students, parents and school staff, institutions of higher learning, local government officials, political, community and spiritual leaders, global partners, corporate entities and the state and federal governments.

It is not so much that facilities can make or break a good school but that they provide an important catalyst to go back to the proverbial drawing board. It's a time to reexamine and challenge all our assumptions so that what springs forth is not just bricks and mortar arranged in a new way, but a whole new way to nurture learning.

### **Writer's Background Information**

Prakash Nair is an international school planning consultant who is widely recognized for his work in the areas of innovative school facilities and educational technology. He is the Director of Educational Facilities Planning for Vitetta and President of Urban Educational Facilities for the 21st Century. Before that, Prakash served as the Director of Operations for a multi-billion dollar school construction program for New York City. His many articles on designing school facilities that will endure well into the 21st century have been internationally published in print and on the Internet and he was interviewed on radio and television by the Australian Broadcasting Corporation.

Prakash has conducted numerous seminars and workshops at the invitation of professional organizations and governments in 14 states and six countries on four continents including the Netherlands and Australia. Prakash can be reached at: [Prakash@Designshare.com](mailto:Prakash@Designshare.com)

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